

# Preface

The presented special edition is dedicated to actual issues in the area of properties' research and treatment methods of recent structural and special materials, as well as chemical technologies in environmental protection and industrial production.

The first chapter contains articles that analyse microstructure, mechanical properties and some processing technologies of structural metals used in machinery.

The application of silica xerogel for the effective adsorption of methyl orange dye, experimental study of the use of fly ash and sludge in ecological slope protection substrate, the process of methanol conversion into dimethyl ether and friction stir welding of polyethylene pipes are the research topics of the next two chapters.

The last chapter is dedicated to an analysis of applications of some methods of computation materials science in materials properties research and modelling.

The presented special edition will be helpful to a wide range of specialists in materials science and applied technologies.